

\*\*\*\*Must show work or explain why you chose the answer you did to receive ANY CREDIT!

1. A polygon was drawn on a piece of paper.

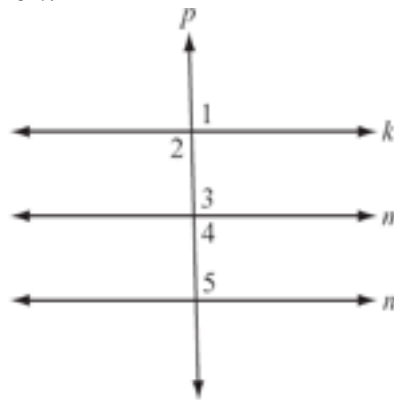
\*Each of its interior angles has the same measure

\*The sum of the measures of its interior angles is  $360^\circ$

Which of the following could be the polygon?

- |                     |                           |
|---------------------|---------------------------|
| a a rectangle       | c a regular pentagon      |
| b a regular hexagon | d an equilateral triangle |

2. In the diagram below, lines  $k$ ,  $m$ , and  $n$  are parallel lines intersected by line  $p$ . Line  $p$  is **not** perpendicular to lines  $k$ ,  $m$ , and  $n$ .



Which of the following angles has a measure that is **not** equal to the measure of  $\angle 1$ ?

- |              |              |
|--------------|--------------|
| a $\angle 2$ | c $\angle 4$ |
| b $\angle 3$ | d $\angle 5$ |

3. Manuel is using a small paper rectangle and a large paper rectangle for an art project:

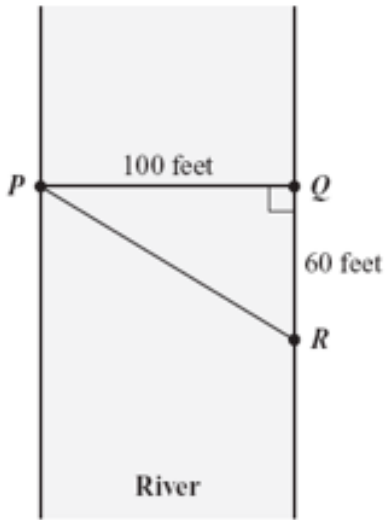
The length of the small rectangle is half the length of the large rectangle

The width of the small rectangle is half the width of the large rectangle

The area of the small rectangle is how many times the area of the large rectangle

- |          |         |
|----------|---------|
| a $1/16$ | c $1/4$ |
| b $1/8$  | d $1/2$ |

4. Triangle  $PQR$  in the diagram below represents Pam's trip across a river.



In the diagram,  $PQ$  represents her planned trip across the river, and  $PR$  represents her actual trip across the river.

Based on the dimensions in the diagram, which of the following is closest to the length of  $PR$ ?

- |          |          |
|----------|----------|
| a 104 ft | c 120 ft |
| b 117 ft | d 160 ft |

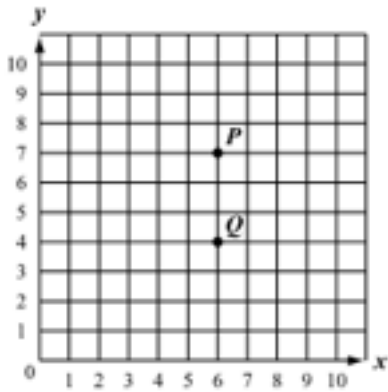
5. The coordinates of the endpoints of  $\overline{QR}$  and its image  $\overline{Q'R'}$  are given below.

$Q(4, 2)$   
 $R(6, 3)$   
 $Q'(2, 4)$   
 $R'(3, 6)$

Which of the following single transformations maps  $\overline{QR}$  to  $\overline{Q'R'}$ ?

- |                                    |  |
|------------------------------------|--|
| a translation 2 units to the left  | c reflection over the line $y = -x$                      |
| b reflection over the line $y = x$ | d rotation $270^\circ$ counterclockwise about the origin |

6. Point  $P(6, 7)$  and point  $Q(6, 4)$  are plotted below.



Point  $Q$  is rotated  $90^\circ$  counterclockwise about point  $P$ . What are the coordinates of the image of point  $Q$  after this rotation?

- a (3, 7)
- b (6, 10)
- c (9, 7)
- d (-6, -9)

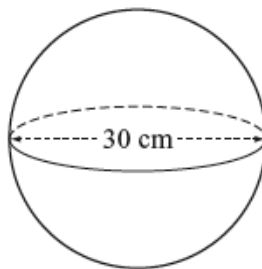
7. The rectangle below is a cross section of a three-dimensional object.



The rectangle could **not** be a cross section of which of the following objects?

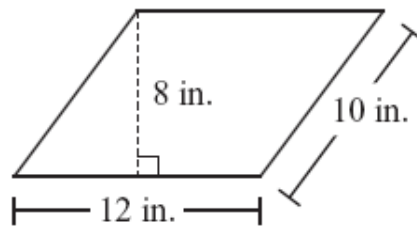
- a a cylinder
- b a prism
- c a cube
- d a cone

8. Greg has a spherical beach ball. The diagram below shows the beach ball and its diameter. For a school project, Greg will paint the entire outside surface of the beach ball. Which of the following is closest to the area of the surface that Greg will paint?



- a  $377\text{cm}^2$
- b  $2,826\text{cm}^2$
- c  $14,130\text{cm}^2$
- d  $35,495\text{cm}^2$

9. The diagram below shows a parallelogram and its dimensions.



Which of the following has an area equal to the area of the parallelogram?

